

## WHAT IS CLAIMED IS:

## 1. An image interpolation method, comprising:

acquiring a first image and a second image;

computing a matching between the first image and the second image and detecting a point on the second image which corresponds to a point on the first image; and

interpolating the point on the first image and the point on the second image,

wherein, in said interpolating, a coordinate of the point on the first image and that of the point on the second image are effected in an interpolation computation and an original color of only one of the points is used in an interpolation result such that interpolation computation as to color is skipped.

## 2. An image interpolation method, comprising:

acquiring a first image, a second image and a matching result between the first image and the second image; and

generating an intermediate image of the first image and the second image by performing interpolation thereon based on the matching result,

wherein, in said generating, a coordinate of a point on the first image and that of a point on the second image are

effected in an interpolation computation and an original color of only one of the points is used in an interpolation result such that interpolation computation as to color is skipped.

3. An image interpolation apparatus, comprising:

an image input unit which acquires a first image and a second image;

a matching processor which computes a matching between the first image and the second image so that a point on the second image corresponding to a point on the first image is detected; and

an intermediate image generator which generates an intermediate image by interpolating the point on the first image and that on the second image,

wherein, in said intermediate image generator, a coordinate of the point on the first image and that of the point on the second image are effected in an interpolation computation and an original color of only one of the points is used in an interpolation result such that interpolation computation as to color is skipped.

4. An image interpolation apparatus according to Claim 3, wherein said matching processor detects, by an image matching, points on the second image that correspond to lattice points

of a mesh provided on the first image, and based on a thus detected result a destination polygon in the second image is defined corresponding to a source polygon of the mesh on the first image.

5. An image interpolation apparatus according to Claim 4, wherein said matching processor performs a pixel-by-pixel matching computation based on correspondence between a critical point detected through a two-dimensional search on the first image and a critical point detected through a two-dimensional search on the second image.

6. An image interpolation apparatus according to Claim 5, wherein said matching processor multiresolutionalizes the first image and the second image by respectively extracting the critical points, then performs the pixel-by-pixel matching computation between same multiresolution levels, and acquires a pixel-by-pixel correspondence relation at a finest level of resolution while inheriting a result of the pixel-by-pixel matching computation at a different multiresolution level.

7. An image interpolation apparatus, comprising:

a communication unit which acquires digital data which comprises a first image, a second image and a matching result

between the first image and the second image; and

an intermediate image generator which generates an intermediate image of the first image and the second image by performing interpolation thereon based on the matching result,

wherein, in said intermediate image generator, a coordinate of the point on the first image and that of the point on the second image are effected in an interpolation computation and an original color of only one of the points is used in an interpolation result such that interpolation computation as to color is skipped.

8. An image interpolation apparatus according to Claim 3, further comprising a display unit which displays at least the intermediate image.

9. An image interpolation apparatus according to Claim 7, further comprising a display unit which displays at least the intermediate image.

10. An image interpolation apparatus according to Claim 3, further comprising a corresponding point file storage in which said matching is stored in a corresponding point file in a manner such that the corresponding point file is associated to the first image.

11. An image interpolation apparatus according to Claim 7, further comprising a corresponding point file storage in which said matching result is stored in a corresponding point file in a manner such that the corresponding point file is associated to the first image.

12. An image interpolation apparatus according to Claim 3, wherein said intermediate image generator does not refer to the second image and an original color of a point included in the first image is utilized as an interpolation result.

13. An image interpolation apparatus according to Claim 7, wherein said intermediate image generator does not refer to the second image and an original color of a point included in the first image is utilized as an interpolation result.

14. An image interpolation apparatus according to Claim 3, wherein said intermediate image generator uses the original color of either points of the first image or points of the second image in a substantially averaged manner as an interpolation result.

15. An image interpolation apparatus according to Claim 14,

wherein said points are pixels and the original color of a pixel of the first image and a pixel of the second image are selected alternately.

16. An image interpolation apparatus according to Claim 7, wherein said intermediate image generator uses the original color of either points of the first image or points of the second image in a substantially averaged manner as an interpolation result.

17. An image interpolation apparatus according to Claim 16, wherein said points are pixels and the original color of a pixel of the first image and a pixel of the second image are selected alternately.

18. A method of performing, based on a matching computation of two images, interpolation on the two images, said method comprising:

referring to data on only one of the two images in interpolating colors of pixels of the two images, while data on colors of the two images are utilized at a stage of the matching computation and, as a result thereof, data on the two images are referred to in interpolating positions of pixels of the two images.

19. An image interpolation apparatus according to Claim 18, wherein in said referring, pixels of the two images are selected alternately, so that a color thereof is used alternately.

20. An image interpolation method, comprising:

acquiring a matching result computed between a first image and a second image; and

varying a position of a pixel included in the first image by incorporating the matching result into the first image and thus generating an intermediate image between the first image and the second image without referring to the second image.

21. A computer program executable by a computer, the program comprising the functions of:

acquiring a first image and a second image;

computing a matching between the thus acquired first and second images and detecting a point on the second image which corresponds to a point on the first image; and

interpolating the point on the first image and the point on the second image,

wherein, in said interpolating, a coordinate of the

point on the first image and that of the point on the second image are effected in an interpolation computation and an original color of only one of the points is used in an interpolation result such that interpolation computation as to color is skipped.

22. A computer program executable by a computer, the program comprising the functions of:

acquiring digital data which comprises a first image, a second image and a matching result thereof; and

generating an intermediate image of the first image and the second image by performing interpolation thereon based on the matching result,

wherein, in said generating, a coordinate of a point on the first image and that of a point on the second image are effected in an interpolation computation and an original color of only one of the points is used in an interpolation result such that interpolation computation as to color is skipped.

23. A computer program executable by a computer, the program comprising the functions of:

acquiring a matching result computed between a first image and a second image; and

varying a position of a pixel included in the first



image by incorporating the matching result into the first image and thus generating an intermediate image between the first image and the second image without referring to the second image.

24. An image interpolation method, comprising:

acquiring a first image, a second image, and a matching result between the first image and the second image; and

generating an intermediate image between the first image and the second image by interpolation such that only selected attributes of pixels are used in the interpolation while non-selected attributes of pixels are determined without interpolation.